

INCIDENCE AND REPORTED CAUSES OF STILLBIRTHS

THIRD ANNUAL REPORT MAY 2007

Arizona Department of Health Services
Public Health Prevention Services
Bureau of Women's and Children's Health
Office of Assessment and Evaluation





Leadership for a Healthy Arizona

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Setting the standard for personal and community health through direct care delivery, science, public policy and leadership.

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Incidence and Reported Causes of Stillbirths

Annual Report 2007

BACKGROUND

In 2002, the Unexplained Infant Death Council was established by ARS 36-2291. This law requires the Department of Health Services Bureau of Women and Children's Health to generate an annual report of the incidence of stillbirths. This report is required to be released to council members, including the governor and the legislature, for review, as well as made available via public records. The first annual report on the Incidence and Reported Causes of Stillbirths was completed in May of 2005. It utilizes data from 2003, as they were the most recent available data at the time. The first annual report detailed the trends of stillbirths in 2003. Using the 2003 analysis results as a comparison, this year's annual report examines data from 2006.

METHODOLOGY

Arizona electronic fetal death certificate data for deaths occurring between January 1, 2006 and December 31, 2006 were summarized in this report. Data were obtained from files generated by the Health Status and Vital Statistics Section of the Bureau of Public Health Statistics within the Arizona Department of Health Services. These files contain only data on stillbirths that were reported to occur at or after 20 weeks of age according to the estimated gestational age. Where the gestational age is unavailable, babies weighing at least 350 grams at birth are considered stillbirths.

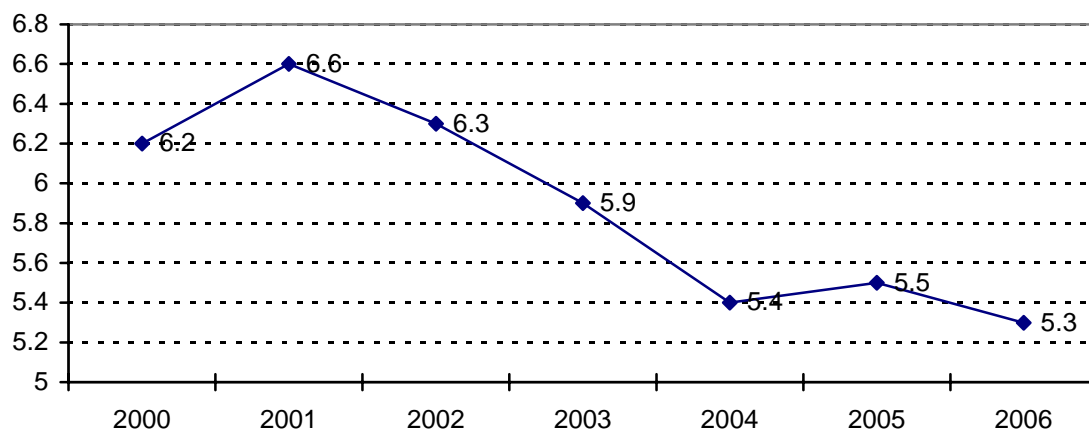
This report focuses on the incidence and reported causes of stillbirths. Both the number of deaths (incidences) and rates are included. Stillbirth rates are useful when looking at trends over time, comparing one population to another or comparing subgroups within a population. In this report, live births and fetal deaths are used as a proxy estimate of pregnancies (excluding induced abortions) that are at risk for a fetal loss. Stillbirth rates are expressed as the number of deaths per 1,000 live births and fetal deaths. Stillbirth rates are presented in this paper by race/ethnicity, maternal age, education level and county of occurrence.

ARIZONA 2006

From January 1, 2006 through December 31, 2006, a total of 543 stillbirths were reported to the Arizona Department of Health Services. Figure 1 shows that the stillbirth rate in Arizona appears to be declining and ranged from as high as 6.6 per 1,000 live

births and fetal deaths in 2001 to a low of 5.3 in 2006. The stillbirth rate in Arizona of 5.3 for 2006 is lower than the most recently reported U.S. rate of 6.4 per 1,000 in 2002.¹

Figure 1. Stillbirth Rates, Arizona 2000-2006
(per 1,000 live births + fetal deaths)

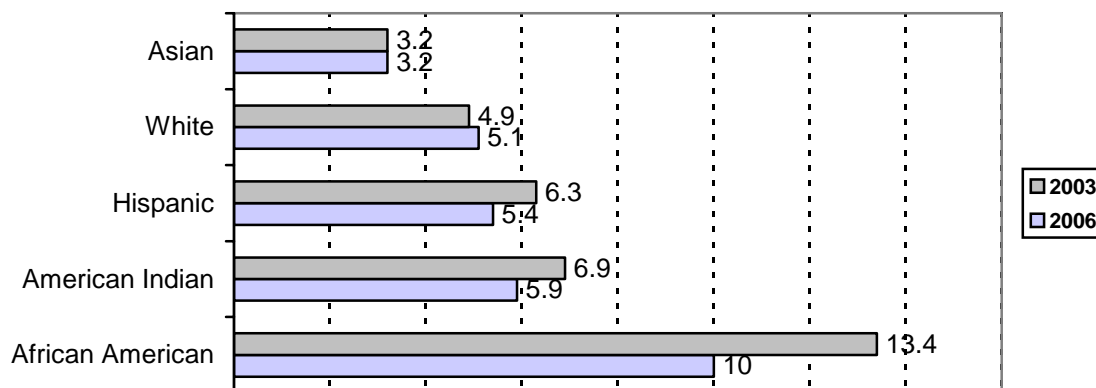


RACE/ETHNICITY

Figure 2 shows a comparison of stillbirth rates by race/ethnicity for 2003 and 2006 in Arizona. Stillbirth rates by race/ethnicity showed the same pattern seen in the 2003 data in that Hispanic, American Indian, and African American women experienced higher stillbirth rates than Asian and White women. Stillbirth rates ranged from a low of 3.2 for Asian women to a high of 10.0 per 1,000 live births and fetal deaths for African American women. Since 2003 there has been an overall decrease in the stillbirth rates among African Americans (13.4 to 10.0), American Indian/Alaskan Native (6.9 to 5.9), Hispanic (6.3 to 5.4); however there was a slight increase in Whites (4.9 to 5.1). Asians did not experience a change.

¹ Centers for Disease Control and Prevention. Morbidity and Mortality Weekly. Vol 53, 24 June 24, 2004. Internet: <http://www.cdc.gov/mmwr/pdf/wk/mm5324.pdf> (Accessed 08/10/2005)

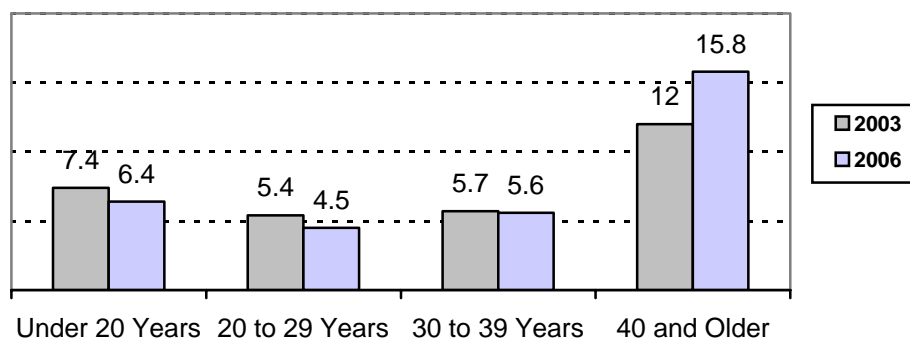
Figure 2. Stillbirth Rates by Year and Race/Ethnicity, Arizona
(per 1,000 live births + fetal deaths)



MATERNAL AGE

As was shown in the report on stillbirths occurring in 2003, the risk of experiencing a stillbirth was highest for women 40 years of age and older (15.8 per 1,000 live births and fetal deaths). For these older women, the risk was nearly four times that of women in their twenties. Figure 3 shows the stillbirth rates for four age groupings.

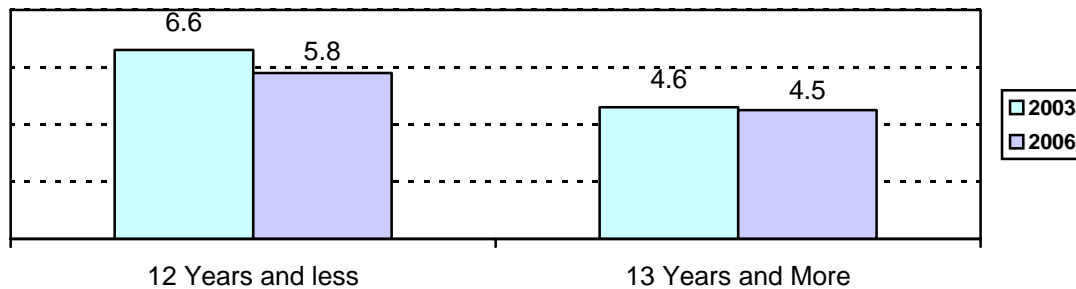
Figure 3. Stillbirth Rates by Year and Maternal Age, Arizona
(per 1,000 live births + fetal deaths)



MATERNAL EDUCATION

Figure 4 below shows the stillbirth rates by level of maternal education. This graph too looks similar to the one presented in the paper on stillbirths occurring in 2003 in that women with 12 years of education or less experienced higher rates of stillbirths (5.8 per 1,000 births and fetal deaths) than women with 13 years or more of education (4.5 per 1,000).

**Figure 4. Stillborn Death Rates by Level of Education,
Arizona 2006**
(per 1,000 live births + fetal deaths)

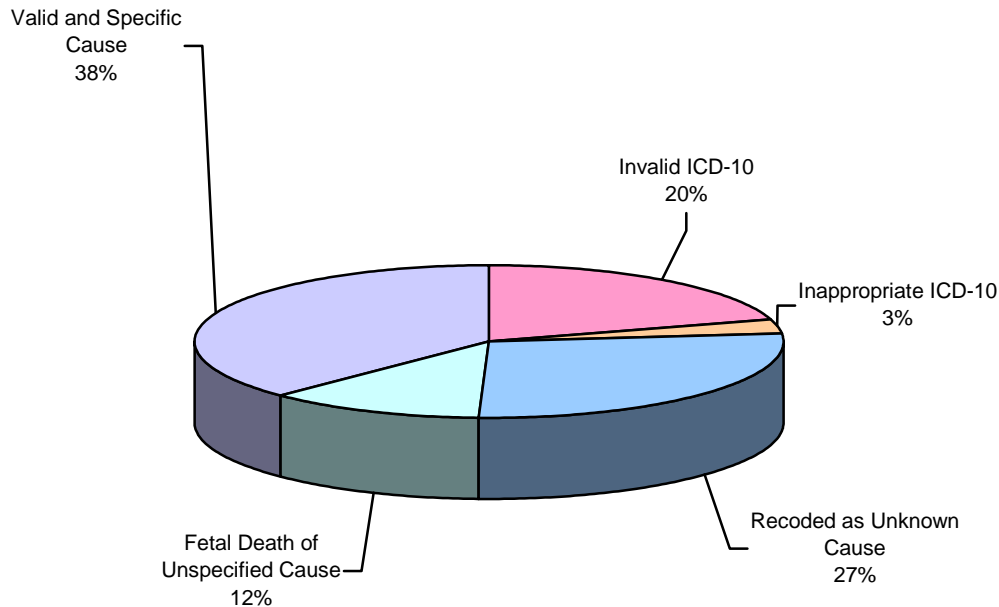


CAUSE OF DEATH

As reported in Incidence and Causes of Stillbirth, 2003, the cause of stillbirth often remains unknown, even when a concerted effort is made to determine the cause of death. Currently, in Arizona, three causes of death can be entered onto the fetal death certificate – a primary cause of death and two contributing factors. Since 2000, the cause of death has been coded using ICD-10 codes in Arizona. Currently, this coding is completed by Arizona Department of Health Services Vital Records staff. The staff person responsible for coding fetal deaths reviews a hard copy of the fetal death certificate and, using all three fields on the death certificate, makes a determination of the most appropriate ICD-10 code. In 2006, there were over 170 distinct ICD-10 codes used to classify cause of death in the fetal death certificate data. In order to group these causes into classifications for this report, a pediatrician from the Arizona Perinatal Trust reviewed the ICD-10 codes and their associated descriptions. The pediatrician then classified the deaths into categories based on their similarities and potential prevention efforts.

Figure 10 shows causes of stillbirths for 2006 reporting period. As is true in many studies on the causes of stillbirths, the cause of death was unknown in the majority of stillbirths for this time period. In many cases, the lack of a definitive cause of death may be the result of data reporting issues. Only two of the cases of stillbirths reviewed for this report did not have an ICD-10 code listed in the fetal death file, 20 percent had invalid ICD-10 codes, three percent had inappropriate ICD-10 codes, and 27 percent were reclassified as an “unknown cause” because the ICD-10 code listed in the death certificate file did not appear to be a valid ICD-10 code for a fetal death. Another 32 percent of the stillbirths were coded with an ICD-10 code of P95, or “fetal death of unspecified cause.” The remaining 18 percent of fetal deaths had ICD-10 codes indicating valid and specific causes of fetal deaths.

Figure 10. Causes of Stillbirths, Arizona 2000-2004



Of the 37 percent of fetal deaths with a known cause of death, the most common cause was cord problems (32 percent) followed by placenta disorders (25 percent), malformations (20 percent) and inflammation or infection (six percent). Cardiovascular disease and hypertension each accounted for five percent of the cases where cause of death was known. "Other causes" was listed for the remaining seven percent.

SUMMARY

While the number of stillbirths has remained relatively stable over the last few years in Arizona, the stillbirth rate has been declining. Additionally, in recent years, the stillbirth rate in Arizona has been lower than the national rate. However, some groups of women in Arizona appear to be at greater risk of delivering stillborns than others and continue to have rates that exceed the national average. Women with less education, women of advanced maternal age, teens, and African American, Native American and Hispanic women are at higher risk levels than other women. The most commonly noted causes of fetal death were cord problems and placental disorders.

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